Ch 6 Quadratic Functions and Inequalities

Peardeck Warmup
6-1

6.1 Graphing Quad. Fn.s

$f(x)=ax^2+bx+c$

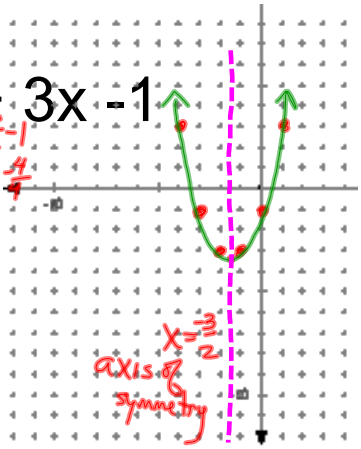
$a \neq 0$

parabola

ex 1:
$f(x)=x^2+3x-1$

x	f(x)
-3	-1
-2	-3
-1	-3
0	-1
$-\frac{3}{2}$	$-\frac{13}{4}$ $-3\frac{1}{4}$
1	3

$(\frac{3}{2})^2$, $\frac{9}{4}-\frac{2}{2}-1$, $-\frac{9}{4}-\frac{4}{4}$



Vertex $\left(\frac{-b}{2a}, \_\_\right)$

Equation of axis of symmetry
$x=\frac{-b}{2a}$

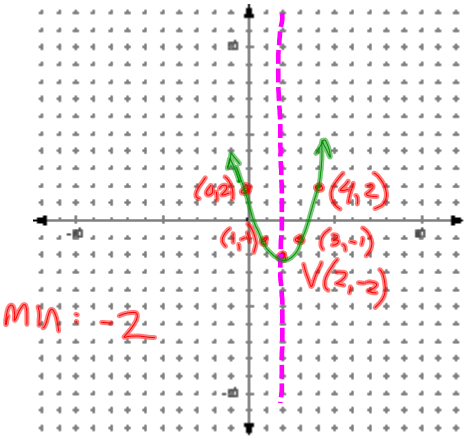
y-intercept $(0, c)$

ex:2 ax^2+bx+c
$f(x)=x^2-4x+2$

$V\left(\frac{4}{2} \leftarrow \frac{-b}{2a}\right)$

$V(2,-2)$

a.o.s. $x=2$ reflection y-int $(0,2)$ mirrored pt $(4,2)$
$(3,-1)$ $(1,-1)$



Minimum pt

at vertex (y-value)

Maximum pt

Do $f(x)=-x^2+2x+3$

$-1+2+3$

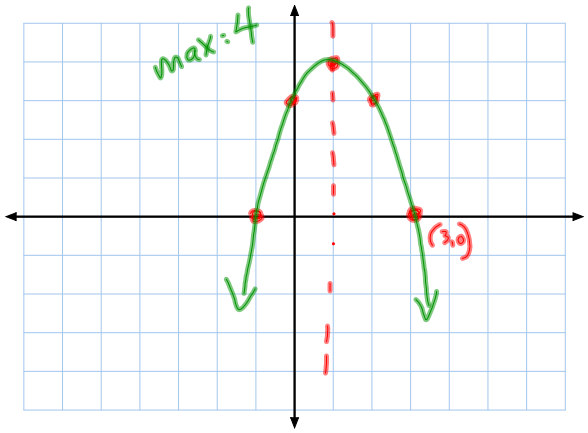
$\frac{-b}{2a}=\frac{-2}{2(-1)}$

V(1,4)

y-int (0,3) (2,3)

a.o.s x=1

(-1,0) (3,0)



ex: $f(x)=x^2+6$

b=0

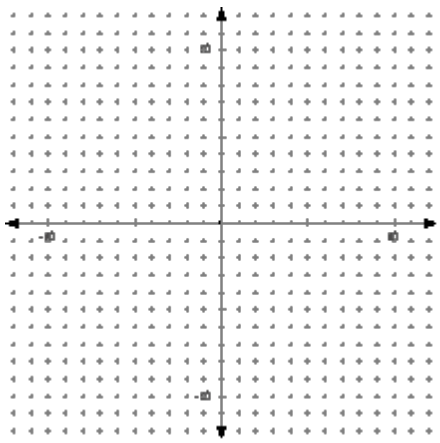
V(0,6)

a.o.s y=0

y-int (0,6)

(1,7) (-1,7)

(2,10) (-2,10)



HW

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